

~3523186
SEQUENCE LISTING

<110> Glaxo Group Limited

<120> Animal Models

<130> PG4871

<140> PCT/EP03/07939

<141> 2003-07-17

<160> 20

<170> PatentIn version 3.1

<210> 1

<211> 2984

<212> DNA

<213> Homo sapiens

<400> 1
gcgccccagt cgacgctgag ctctcttgct actcagagtt gcaacctcag cctcgctatg 60
gctcccagca gccccggcc cgcgctgccc gcactcctgg tcctgctcgg ggctctgttc 120
ccaggacctg gcaatgcca gacatctgtg tccccctcaa aagtcctcct gccccgggga 180
ggctccgtgc tggtagcatg cagcacctcc tgtgaccagc ccaagttgtt gggcatagag 240
accccgttgc ctaaaaagga gttgctcctg cctgggaaca accggaaggt gtatgaactg 300
agcaatgtgc aagaagatag ccaaccaatg tgctattcaa actgccctga tgggcagtca 360
acagctaaaa ccttcctcac cgtgtactgg actccagaac ggggtggaact ggcaccctc 420
ccctcttggc agccagtggg caagaacctt accctacgct gccaggtgga ggggtgggca 480
ccccgggcca acctcaccgt ggtgctgctc cgtggggaga aggagctgaa acgggagcca 540
gctgtggggg agcccgtga ggtcacgacc acggtgctgg tgaggagaga tcaccatgga 600
gccaatttct cgtgccgcac tgaactggac ctgcggcccc aagggtgga gctgtttgag 660

~3523186

aacacctcgg	ccccctacca	gctccagacc	tttgtcctgc	cagcgactcc	cccacaactt	720
gtcagcccc	gggtcctaga	ggtggacacg	caggggaccg	tggtctgttc	cctggacggg	780
ctgttcccag	tctcggaggc	ccaggtccac	ctggcactgg	gggaccagag	gttgaacccc	840
acagtcacct	atggcaacga	ctcctttctc	gccaaaggcct	cagtcagtgt	gaccgcagag	900
gacgagggca	cccagcggct	gacgtgtgca	gtaatactgg	ggaaccagag	ccaggagaca	960
ctgcagacag	tgaccatcta	cagcttttcc	gcgcccacg	tgattctgac	gaagccagag	1020
gtctcagaag	ggaccgaggt	gacagtgaag	tgtgaggccc	accctagagc	caaggtgacg	1080
ctgaatgggg	ttccagccca	gccactgggc	ccgagggccc	agctcctgct	gaaggccacc	1140
ccagaggaca	acgggcgcag	cttctcctgc	tctgcaaccc	tggaggtggc	cggccagctt	1200
atacacaaga	accagacccg	ggagcttcgt	gtcctgtatg	gccccgact	ggacgagagg	1260
gattgtccgg	gaaactggac	gtggccagaa	aattcccagc	agactccaat	gtgccaggct	1320
tgggggaacc	cattgcccga	gctcaagtgt	ctaaaggatg	gcactttccc	actgcccata	1380
ggggaatcag	tgactgtcac	tcgagatctt	gagggcacct	acctctgtcg	ggccaggagc	1440
actcaagggg	aggtcacccg	caaggtgacc	gtgaatgtgc	tctccccccg	gtatgagatt	1500
gtcatcatca	ctgtggtagc	agccgcagtc	ataatgggca	ctgcaggcct	cagcacgtac	1560
ctctataacc	gccagcggaa	gatcaagaaa	tacagactac	aacaggccca	aaaagggacc	1620
cccatgaaac	cgaacacaca	agccacgcct	ccctgaacct	atcccgggac	agggcctctt	1680
cctcggcctt	cccatattgg	tggcagtggt	gccacactga	acagagtgga	agacatatgc	1740
catgcagcta	cacctaccgg	ccctgggacg	ccggaggaca	gggcattgtc	ctcagtcaga	1800
tacaacagca	tttggggcca	tggtacctgc	acacctaaaa	cactaggcca	cgcattctgat	1860
ctgtagtcac	atgactaagc	caagaggaag	gagcaagact	caagacatga	ttgatggatg	1920
ttaaagtcta	gcctgatgag	aggggaagtg	gtgggggaga	catagcccca	ccatgaggac	1980
atacaactgg	gaaatactga	aacttgctgc	ctattgggta	tgctgaggcc	ccacagactt	2040
acagaagaag	tggccctcca	tagacatgtg	tagcatcaaa	acacaaaggc	ccacacttcc	2100
tgacggatgc	cagcttgggc	actgctgtct	actgacccca	acccttgatg	atatgtattt	2160
attcatttgt	tattttacca	gctattttatt	gagtgtcttt	tatgtaggct	aaatgaacat	2220
aggtctctgg	cctcacggag	ctcccagtc	taatcacatt	caaggtcacc	aggtacagtt	2280
gtacaggttg	tacactgcag	gagagtgcct	ggcaaaaaga	tcaaatgggg	ctgggacttc	2340
tcattggcca	acctgccttt	ccccagaagg	agtgattttt	ctatcggcac	aaaagcacta	2400
tatggactgg	taatggttac	aggttcagag	attacccagt	gaggccttat	tcctcccttc	2460
cccccaaac	tgacaccttt	gttagccacc	tccccaccca	catacatctt	tgccagtgtt	2520
cacaatgaca	ctcagcggtc	atgtctggac	atgagtgtccc	agggaatatg	ccaagctat	2580

~3523186

gccttgtcct cttgtcctgt ttgcatttca ctgggagctt gcactatgca gctccagttt	2640
cctgcagtga tcagggtcct gcaagcagtg ggggaagggg ccaagggtatt ggaggactcc	2700
ctcccagctt tggaagcctc atccgcgtgt gtgtgtgtgt gtatgtgtag acaagctctc	2760
gctctgtcac ccaggctgga gtgcagtggt gcaatcatgg ttcactgcag tcttgacctt	2820
ttgggctcaa gtgatcctcc cacctcagcc tcctgagtag ctgggacat aggctcacia	2880
caccacacct ggcaaatttg attttttttt tttttccaga gacggggtct cgcaacattg	2940
cccagacttc ctttgtgtta gttaataaag ctttctcaac tgcc	2984

<210> 2

<211> 189

<212> DNA

<213> Homo sapiens

<400> 2

ggaggctccg tgctggtgac atgcagcacc tcctgtgacc agcccaagtt gttgggcata	60
gagaccccggt tgcctaaaaa ggagttgctc ctgcctggga acaaccggaa ggtgtatgaa	120
ctgagcaatg tgcaagaaga tagccaacca atgtgctatt caaactgccc tgatgggcag	180
tcaacagct	189

<210> 3

<211> 198

<212> DNA

<213> Homo sapiens

<400> 3

ggcaagaacc ttaccctacg ctgccaggtg gaggggtgggg caccgccggc caacctcacc	60
gtggtgctgc tccgtgggga gaaggagctg aaacgggagc cagctgtggg ggagcccgct	120
gaggtcacga ccacggtgct ggtgaggaga gatcaccatg gagccaattt ctcgtgccgc	180
actgaactgg acctgcgg	198

<210> 4

<211> 532

<212> PRT

<213> Homo sapiens

~3523186

<400> 4

Met Ala Pro Ser Ser Pro Arg Pro Ala Leu Pro Ala Leu Leu Val Leu
1 5 10 15
Leu Gly Ala Leu Phe Pro Gly Pro Gly Asn Ala Gln Thr Ser Val Ser
20 25 30
Pro Ser Lys Val Ile Leu Pro Arg Gly Gly Ser Val Leu Val Thr Cys
35 40 45
Ser Thr Ser Cys Asp Gln Pro Lys Leu Leu Gly Ile Glu Thr Pro Leu
50 55 60
Pro Lys Lys Glu Leu Leu Leu Pro Gly Asn Asn Arg Lys Val Tyr Glu
65 70 75 80
Leu Ser Asn Val Gln Glu Asp Ser Gln Pro Met Cys Tyr Ser Asn Cys
85 90 95
Pro Asp Gly Gln Ser Thr Ala Lys Thr Phe Leu Thr Val Tyr Trp Thr
100 105 110
Pro Glu Arg Val Glu Leu Ala Pro Leu Pro Ser Trp Gln Pro Val Gly
115 120 125
Lys Asn Leu Thr Leu Arg Cys Gln Val Glu Gly Gly Ala Pro Arg Ala
130 135 140
Asn Leu Thr Val Val Leu Leu Arg Gly Glu Lys Glu Leu Lys Arg Glu
145 150 155 160
Pro Ala Val Gly Glu Pro Ala Glu Val Thr Thr Thr Val Leu Val Arg
165 170 175
Arg Asp His His Gly Ala Asn Phe Ser Cys Arg Thr Glu Leu Asp Leu
180 185 190
Arg Pro Gln Gly Leu Glu Leu Phe Glu Asn Thr Ser Ala Pro Tyr Gln
195 200 205
Leu Gln Thr Phe Val Leu Pro Ala Thr Pro Pro Gln Leu Val Ser Pro
210 215 220
Arg Val Leu Glu Val Asp Thr Gln Gly Thr Val Val Cys Ser Leu Asp
225 230 235 240

~3523186

Gly Leu Phe Pro Val Ser Glu Ala Gln Val His Leu Ala Leu Gly Asp
245 250 255

Gln Arg Leu Asn Pro Thr Val Thr Tyr Gly Asn Asp Ser Phe Ser Ala
260 265 270

Lys Ala Ser Val Ser Val Thr Ala Glu Asp Glu Gly Thr Gln Arg Leu
275 280 285

Thr Cys Ala Val Ile Leu Gly Asn Gln Ser Gln Glu Thr Leu Gln Thr
290 295 300

Val Thr Ile Tyr Ser Phe Pro Ala Pro Asn Val Ile Leu Thr Lys Pro
305 310 315 320

Glu Val Ser Glu Gly Thr Glu Val Thr Val Lys Cys Glu Ala His Pro
325 330 335

Arg Ala Lys Val Thr Leu Asn Gly Val Pro Ala Gln Pro Leu Gly Pro
340 345 350

Arg Ala Gln Leu Leu Leu Lys Ala Thr Pro Glu Asp Asn Gly Arg Ser
355 360 365

Phe Ser Cys Ser Ala Thr Leu Glu Val Ala Gly Gln Leu Ile His Lys
370 375 380

Asn Gln Thr Arg Glu Leu Arg Val Leu Tyr Gly Pro Arg Leu Asp Glu
385 390 395 400

Arg Asp Cys Pro Gly Asn Trp Thr Trp Pro Glu Asn Ser Gln Gln Thr
405 410 415

Pro Met Cys Gln Ala Trp Gly Asn Pro Leu Pro Glu Leu Lys Cys Leu
420 425 430

Lys Asp Gly Thr Phe Pro Leu Pro Ile Gly Glu Ser Val Thr Val Thr
435 440 445

Arg Asp Leu Glu Gly Thr Tyr Leu Cys Arg Ala Arg Ser Thr Gln Gly
450 455 460

Glu Val Thr Arg Glu Val Thr Val Asn Val Leu Ser Pro Arg Tyr Glu
465 470 475 480

Ile Val Ile Ile Thr Val Val Ala Ala Ala Val Ile Met Gly Thr Ala
Page 5

485 ~3523186 490 495

Gly Leu Ser Thr Tyr Leu Tyr Asn Arg Gln Arg Lys Ile Lys Lys Tyr
500 505 510

Arg Leu Gln Gln Ala Gln Lys Gly Thr Pro Met Lys Pro Asn Thr Gln
515 520 525

Ala Thr Pro Pro
530

<210> 5

<211> 63

<212> PRT

<213> Homo sapiens

<400> 5

Gly Gly Ser Val Leu Val Thr Cys Ser Thr Ser Cys Asp Gln Pro Lys
1 5 10 15

Leu Leu Gly Ile Glu Thr Pro Leu Pro Lys Lys Glu Leu Leu Leu Pro
20 25 30

Gly Asn Asn Arg Lys Val Tyr Glu Leu Ser Asn Val Gln Glu Asp Ser
35 40 45

Gln Pro Met Cys Tyr Ser Asn Cys Pro Asp Gly Gln Ser Thr Ala
50 55 60

<210> 6

<211> 66

<212> PRT

<213> Homo sapiens

<400> 6

Gly Lys Asn Leu Thr Leu Arg Cys Gln Val Glu Gly Gly Ala Pro Arg
1 5 10 15

Ala Asn Leu Thr Val Val Leu Leu Arg Gly Glu Lys Glu Leu Lys Arg
20 25 30

~3523186

Glu Pro Ala Val Gly Glu Pro Ala Glu Val Thr Thr Thr Val Leu Val
 35 40 45

Arg Arg Asp His His Gly Ala Asn Phe Ser Cys Arg Thr Glu Leu Asp
 50 55 60

Leu Arg
 65

<210> 7
 <211> 1614
 <212> DNA
 <213> Mus sp.

<400> 7
 atggcttcaa cccgtgccaa gcccacgcta cctctgctcc tggccctggc caccgttgtg 60
 atccctgggc ctggtgatgc tcaggtatcc atccatccca gagaagcctt cctgccccag 120
 ggtgggtccg tgcaggtgaa ctgttcttcc tcatgcaagg aggacctcag cctgggcttg 180
 gagactcagt ggctgaaaga tgagctcgag agtggacca actggaagct gtttgagctg 240
 agcgagatcg gggaggacag cagtccgctg tgctttgaga actgtggcac cgtgcagtcg 300
 tccgcttccg ctaccatcac cgtgtattcg tttccggaga gtgtggagct gagacctctg 360
 ccagcctggc agcaagtagg caaggacctc accctgcgct gccacgtgga tgggtggagca 420
 ccgcggaacc agctctcagc agtgcctgctc cgtggggagg agatactgag ccgccagcca 480
 gtgggtgggc accccaagga cccaaggag atcacattca cggctgctggc tagcagaggg 540
 gaccacggag ccaatttctc atgccgcaca gaactggatc tcaggccgca agggctggca 600
 ttgttctcta atgtctccga ggccaggagc ctccggactt tcgatcttcc agctaccatc 660
 ccaaagctcg acaccctga cctcctggag gtgggcaccc agcagaagtt gttttgctcc 720
 ctggaaggcc tgtttcctgc ctctgaagct cggatatacc tggagctggg aggccagatg 780
 ccgacccagg agagcacaaa cagcagtgac tctgtgtcag cactgcctt ggtagaggtg 840
 actgaggagt tcgacagaac cctgccgctg cgctgcgttt tggagctagc ggaccagatc 900
 ctggagacgc agaggacctt aacagtctac aacttttcag ctccggctct gaccctgagc 960
 cagctggagg tctcggaagg gagccaagta actgtgaagt gtgaagcca cagtgggtcg 1020
 aaggtgggtc ttctgagcgg cgtcagacct aggccaccca cccgcaggt ccaattcaca 1080
 ctgaatgcca gctcggagga tcacaaacga agcttctttt gctctgccgc tctggaggtg 1140
 gcgggaaagt tcctgtttaa aaaccagacc ctggaactgc acgtgctgta tggtcctcgg 1200

~3523186

ctggacgaga	cggactgctt	ggggaactgg	acctggcaag	aggggtctca	gcagactctg	1260
aaatgccagg	cctgggggaa	cccatctcct	aagatgacct	gcagacggaa	ggcagatggt	1320
gccctgctgc	ccatcggggg	ggtgaagtct	gtcaaacagg	agatgaatgg	tacatacgtg	1380
tgccatgcct	ttagctccca	tggaatgtc	accaggaatg	tgtacctgac	agtactgtac	1440
cactctcaaa	ataactggac	tataatcatt	ctggtgccag	tactgctggt	cattgtgggc	1500
ctcgtgatgg	cagcctctta	tgtttataac	cgccagagaa	agatcaggat	atacaagtta	1560
cagaaggctc	aggaggaggc	cataaaactc	aagggaacaag	ccccacctcc	ctga	1614

<210> 8

<211> 204

<212> DNA

<213> Mus sp.

<400> 8						
ggcaccacagc	agaagttggt	ttgctccctg	gaaggcctgt	ttcctgcctc	tgaagctcgg	60
atatacctgg	agctgggagg	ccagatgccg	accagaggaga	gcacaaacag	cagtgactct	120
gtgtcagcca	ctgccttggt	agaggtgact	gaggagtctg	acagaaccct	gccgctgcgc	180
tgcgtttttg	agctagcgga	ccag				204

<210> 9

<211> 162

<212> DNA

<213> Mus sp.

<400> 9						
gggagccaag	taactgtgaa	gtgtgaagcc	cacagtgggt	cgaaggtggt	tcttctgagc	60
ggcgtcgagc	ctaggccacc	caccccgcaa	gtccaattca	cactgaatgc	cagctcggag	120
gatcacaac	gaagcttctt	ttgctctgcc	gctctggagg	tg		162

<210> 10

<211> 159

<212> DNA

<213> Mus sp.

~3523186

<400> 10
gaggggtctc agcagactct gaaatgccag gcctggggga acccatctcc taagatgacc 60
tgcagacgga aggcagatgg tgccttgctg cccatcgggg tggatgaagtc tgtcaaacag 120
gagatgaatg gtacatacgt gtgccatgcc tttagctcc 159

<210> 11
<211> 68
<212> PRT
<213> Mus sp.

<400> 11
Gly Thr Gln Gln Lys Leu Phe Cys Ser Leu Glu Gly Leu Phe Pro Ala
1 5 10 15
Ser Glu Ala Arg Ile Tyr Leu Glu Leu Gly Gly Gln Met Pro Thr Gln
20 25 30
Glu Ser Thr Asn Ser Ser Asp Ser Val Ser Ala Thr Ala Leu Val Glu
35 40 45
Val Thr Glu Glu Phe Asp Arg Thr Leu Pro Leu Arg Cys Val Leu Glu
50 55 60
Leu Ala Asp Gln
65

<210> 12
<211> 54
<212> PRT
<213> Mus sp.

<400> 12
Gly Ser Gln Val Thr Val Lys Cys Glu Ala His Ser Gly Ser Lys Val
1 5 10 15
Val Leu Leu Ser Gly Val Glu Pro Arg Pro Pro Thr Pro Gln Val Gln
20 25 30
Phe Thr Leu Asn Ala Ser Ser Glu Asp His Lys Arg Ser Phe Phe Cys
35 40 45

~3523186

Ser Ala Ala Leu Glu val
50

<210> 13

<211> 53

<212> PRT

<213> Mus sp.

<400> 13

Glu Gly Ser Gln Gln Thr Leu Lys Cys Gln Ala Trp Gly Asn Pro Ser
1 5 10 15

Pro Lys Met Thr Cys Arg Arg Lys Ala Asp Gly Ala Leu Leu Pro Ile
20 25 30

Gly val val Lys Ser val Lys Gln Glu Met Asn Gly Thr Tyr val Cys
35 40 45

His Ala Phe Ser Ser
50

<210> 14

<211> 1608

<212> DNA

<213> Artificial sequence

<220>

<223> DNA encoding a human/mouse chimaeric ICAM-1 polypeptide

<400> 14

atggctccca gcagcccccg gcccgcgctg cccgcactcc tggctctgct cggggctctg	60
ttcccaggac ctggcaatgc ccagacatct gtgtccccct caaaagtcac cctgccccgg	120
ggaggctccg tgctggtgac atgcagcacc tcctgtgacc agcccaagtt gttgggcata	180
gagaccccgt tgcctaaaaa ggagttgctc ctgcctggga acaaccggaa ggtgtatgaa	240
ctgagcaatg tgcaagaaga tagccaacca atgtgctatt caaactgccc tgatgggcag	300
tcaacagcta aaaccttcct caccgtgtac tggactccag aacgggtgga actggcacc	360
ctcccctctt ggcagccagt gggcaagaac cttaccctac gctgccaggt ggaggggtggg	420
gcaccccggg ccaacctcac cgtggtgctg ctccgtgggg agaaggagct gaaacgggag	480

~3523186

```
ccagctgtgg gggagcccg tgaggtcacg accacggtgc tggtagaggag agatcaccat 540
ggagccaatt tctcgtgccg cactgaactg gacctgcggc cccaagggct ggcattgttc 600
tctaattgtct ccgaggccag gagcctccgg actttcgatc ttccagctac catcccaaag 660
ctcgacaccc ctgacctcct ggaggtgggc acccagcaga agttgttttg ctccctggaa 720
ggcctgtttc ctgcctctga agctcggata tacctggagc tgggaggcca gatgccgacc 780
caggagagca caaacagcag tgactctgtg tcagccactg ccttggtaga ggtgactgag 840
gagttcgaca gaaccctgcc gctgcgctgc gttttggagc tagcggacca gatcctggag 900
acgcagagga ccttaacagt ctacaacttt tcagctcctg tcctgaccct gagccagctg 960
gaggtctcgg aaggggagcca agtaactgtg aagtgtgaag cccacagtgg gtcgaagggtg 1020
gttcttctga gcggcgctga gcctaggcca cccaccccg aagtccaatt cacactgaat 1080
gccagctcgg aggatcacaa acgaagcttc ttttgctctg ccgctctgga ggtggcgagg 1140
aagttcctgt ttaaaaacca gacctggaa ctgcacgtgc tgtatggtcc tcggctggac 1200
gagacggact gcttggggaa ctggacctgg caagaggggt ctcagcagac tctgaaatgc 1260
caggcctggg ggaacccatc tcctaagatg acctgcagac ggaaggcaga tggtgccctg 1320
ctgcccacgc ggggtggtgaa gtctgtcaaa caggagatga atggtacata cgtgtgccat 1380
gccttttagct cccatgggaa tgtcaccagg aatgtgtacc tgacagtact gtaccactct 1440
caaaataact ggactataat cattctggtg ccagtactgc tggtcattgt gggcctcgtg 1500
atggcagcct cttatgttta taaccgccag agaaagatca ggatatacaa gttacagaag 1560
gctcaggagg aggccataaa actcaaggga caagccccac ctccctga 1608
```

<210> 15

<211> 535

<212> PRT

<213> Artificial sequence

<220>

<223> Amino acid sequence of a human/mouse chimaeric ICAM-1 polypeptide

<400> 15

```
Met Ala Pro Ser Ser Pro Arg Pro Ala Leu Pro Ala Leu Leu Val Leu
1          5          10          15
```

```
Leu Gly Ala Leu Phe Pro Gly Pro Gly Asn Ala Gln Thr Ser Val Ser
20          25          30
```

~3523186

Pro Ser Lys Val Ile Leu Pro Arg Gly Gly Ser Val Leu Val Thr Cys
35 40 45

Ser Thr Ser Cys Asp Gln Pro Lys Leu Leu Gly Ile Glu Thr Pro Leu
50 55 60

Pro Lys Lys Glu Leu Leu Leu Pro Gly Asn Asn Arg Lys Val Tyr Glu
65 70 75 80

Leu Ser Asn Val Gln Glu Asp Ser Gln Pro Met Cys Tyr Ser Asn Cys
85 90 95

Pro Asp Gly Gln Ser Thr Ala Lys Thr Phe Leu Thr Val Tyr Trp Thr
100 105 110

Pro Glu Arg Val Glu Leu Ala Pro Leu Pro Ser Trp Gln Pro Val Gly
115 120 125

Lys Asn Leu Thr Leu Arg Cys Gln Val Glu Gly Gly Ala Pro Arg Ala
130 135 140

Asn Leu Thr Val Val Leu Leu Arg Gly Glu Lys Glu Leu Lys Arg Glu
145 150 155 160

Pro Ala Val Gly Glu Pro Ala Glu Val Thr Thr Thr Val Leu Val Arg
165 170 175

Arg Asp His His Gly Ala Asn Phe Ser Cys Arg Thr Glu Leu Asp Leu
180 185 190

Arg Pro Gln Gly Leu Ala Leu Phe Ser Asn Val Ser Glu Ala Arg Ser
195 200 205

Leu Arg Thr Phe Asp Leu Pro Ala Thr Ile Pro Lys Leu Asp Thr Pro
210 215 220

Asp Leu Leu Glu Val Gly Thr Gln Gln Lys Leu Phe Cys Ser Leu Glu
225 230 235 240

Gly Leu Phe Pro Ala Ser Glu Ala Arg Ile Tyr Leu Glu Leu Gly Gly
245 250 255

Gln Met Pro Thr Gln Glu Ser Thr Asn Ser Ser Asp Ser Val Ser Ala
260 265 270

Thr Ala Leu Val Glu Val Thr Glu Glu Phe Asp Arg Thr Leu Pro Leu
275 280 285

~3523186

Arg Cys Val Leu Glu Leu Ala Asp Gln Ile Leu Glu Thr Gln Arg Thr
290 295 300

Leu Thr Val Tyr Asn Phe Ser Ala Pro Val Leu Thr Leu Ser Gln Leu
305 310 315 320

Glu Val Ser Glu Gly Ser Gln Val Thr Val Lys Cys Glu Ala His Ser
325 330 335

Gly Ser Lys Val Val Leu Leu Ser Gly Val Glu Pro Arg Pro Pro Thr
340 345 350

Pro Gln Val Gln Phe Thr Leu Asn Ala Ser Ser Glu Asp His Lys Arg
355 360 365

Ser Phe Phe Cys Ser Ala Ala Leu Glu Val Ala Gly Lys Phe Leu Phe
370 375 380

Lys Asn Gln Thr Leu Glu Leu His Val Leu Tyr Gly Pro Arg Leu Asp
385 390 395 400

Glu Thr Asp Cys Leu Gly Asn Trp Thr Trp Gln Glu Gly Ser Gln Gln
405 410 415

Thr Leu Lys Cys Gln Ala Trp Gly Asn Pro Ser Pro Lys Met Thr Cys
420 425 430

Arg Arg Lys Ala Asp Gly Ala Leu Leu Pro Ile Gly Val Val Lys Ser
435 440 445

Val Lys Gln Glu Met Asn Gly Thr Tyr Val Cys His Ala Phe Ser Ser
450 455 460

His Gly Asn Val Thr Arg Asn Val Tyr Leu Thr Val Leu Tyr His Ser
465 470 475 480

Gln Asn Asn Trp Thr Ile Ile Ile Leu Val Pro Val Leu Leu Val Ile
485 490 495

Val Gly Leu Val Met Ala Ala Ser Tyr Val Tyr Asn Arg Gln Arg Lys
500 505 510

Ile Arg Ile Tyr Lys Leu Gln Lys Ala Gln Glu Glu Ala Ile Lys Leu
515 520 525

Lys Gly Gln Ala Pro Pro Pro

530

535

~3523186

<210> 16

<211> 2602

<212> DNA

<213> Rattus sp.

<400> 16

```

ctgctgcctg cactttgccc tggctctcca atggcttcaa cccgtgccag gcccatgctg    60
cctctgctcc tggctcctggt cgccgtttgtg atccccgggc ctgtcgggtgc tcaggtatcc   120
atccatccca cagaagcctt cctgcctcgg ggtggatccg tgcagggtgaa ctgctcttcc   180
tcttgccaag acgagaacct cggcctgggg ttggagacta actggatgaa agacgaacta   240
tcgagtggac acaactggaa gctcttcaag ctgagcgaca ttggggaaga cagcagacca   300
ctgtgctttg agaactgtgg caccacgcag tcctcggctt ctgccaccat cactgtgtat   360
tcgttcccag agcgagtgga gctggatcct ctgcccgcct ggagcaggt gggcaagaac   420
ctcatcctgc gctgcctggt ggaaggcgga gcaccgcgga cacagctctc agtagtgctg   480
ctccgtggga atgagacact gagccgccag gcagtggatg gggaccccaa ggagatcaca   540
ttcacggtgc tggccagcag aggcgaccac ggagccaatt tctcatgctt cacagaactg   600
gacctcaggg cacaaggggt gtcactgttc aagaatgtct ccgaggtcag gcagctccgg   660
actttcgatc ttccgactag ggtcctgaag ctcgacaccc ctgacctcct ggaggtgggc   720
accagcaga agttcttgtg ttccctggaa ggcctgtttc ctgcctctga agctcagata   780
tacctggaga tgggaggcca gatgctgacc ctggagagca caaacagcag agattttgtg   840
tcagccactg cctcagtgga ggtgactgag aagttggaca gaaccctgca gctgcgctgt   900
gttttgagac tggcggacca gaccctggag atggagaaga ccttgagaat ctacaacttt   960
tcagctccca tcctgaccct gagccagccg gaggtctcag aaggggacca agtaactgtg  1020
aagtgtgaag cccacggtgg ggcacaggtg gtgcttctga acagtacttc ccccaggcca  1080
cccacctcac aggggtacttc ccccaggcca cccacctcac agatccaatt cacactgaat  1140
gccagcccgg aggatcaciaa acgacgcttc ttttgctctg cggccttgga ggtggatggg  1200
aagtccctgt ttaaaaacca gaccttgaa ctccatgtgc tatatgggtc tcacctggac  1260
aagaaggact gcttggggaa ctggacctgg caagaggggt ctcagcagac tcttacatgc  1320
cagccccagg ggaatccagc ccctaattctg acctgcagcc ggaaagcaga tgggtgtccc  1380
ctgcctatcg ggatgggtgaa gtctgtcaaa cgggagatga atggtaccta caagtgccgt  1440
gccttttagct cccgtgggag taccaccagg gacgtgcacc tgacagtgtg gtaccatgat  1500

```

~3523186

```
cagaatacct gggtcataat tgttggtgtg ttggtactga tcattgcggg cttcgtgac 1560
gtggcgtcca ttacaccta ttaccgccag aggaagatca ggatatacaa gttacagaag 1620
gctcaggagg aggccctaaa actcaaggta caagccccgc ctccctgagc ccactggaca 1680
ggacacctgc ctgggccccg ctgctcttga acagatcaat ggacagcatt tacccctcac 1740
ccacctcctc tggctgtcac aggacaggac agtggcctgg ggatgcatac ttgtagcctc 1800
aggcctaaga ggactcggag gggcaagact gtgaactcgt gacctggaca cacctacagc 1860
ctggtggggc tgcagccaag aaaggctgac ttccttctct attaccctg ctgagggggc 1920
ccctacctta ggaagggtgtg atatccggtg gacacaagca agagaagaaa aggaacacca 1980
tgcttcctct gacatgggaa agctgggaca ctgtcccaa ctcttggtga tgtatttatt 2040
aattcagagt tctgacagtt atttattgag taccctgtac agacactaga ggagttagca 2100
ggttaacatg taagttattg cctagaccct ggtgaagggg cacaacagag tctggggaaa 2160
gatcatagcg gtttgggctt ctccacaggt caggggtgctt tcctcaaaag agctgatttc 2220
tttcacgagt catataaata ctatgtggac gagcagtggc cctctgctcg tagacctctc 2280
tgggagcccct gcctcctccc acagcctgga gtctcccagc accagcatgg gtgaccacct 2340
ccccacctac atacattcct acctttgttc ccaatgtcaa ccaccatgcc taaatatgga 2400
cgctcacctt tagcagctca acaatggagt ctcatgcccg tgaaattatg gtcaatccct 2460
gcatgcctcc acccggtcc acctcaaaga gaatgcctgg gagaaaatgt tccaaccact 2520
tagaagggtc ctgcaagctg ttgtgggagg gtaggcaccc ctcccagcgc agaagccttt 2580
cctttgaatc aataaagttt ta 2602
```

<210> 17

<211> 19

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide SB186

<400> 17

```
Cys Thr Pro Leu Pro Lys Lys Glu Leu Leu Leu Pro Gly Asn Asn Arg
1          5          10          15
```

Lys Val Tyr

~3523186

<210> 18

<211> 15

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide SB187

<400> 18

Gln Thr Ser Val Ser Pro Ser Lys Val Ile Leu Pro Arg Gly Cys
1 5 10 15

<210> 19

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer NS 25

<400> 19

gggcagtcaa cagctaaaac ct

22

<210> 20

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer NS 26

<400> 20

tccagggagc aaaacaactt ct

22